R E P O R T R E S U M E S

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THE ORGANIZATION OF INTERRELATED INDIVIDUAL PROGRESS AND ABILITY LEVEL COURSES IN MATHEMATICS AT GARBER HIGH SCHOOL--AN INTRODUCTION.

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AN ANALYSIS OF A HIGH SCHOOL THAT HAS ORGANIZED ITS RESOURCES TO MEET THE EDUCATIONAL NEEDS OF ALL OF ITS STUDENTS WAS DESCRIBED IN THE FIRST OF A SERIES OF THREE REPORTS. THE GARBER HIGH SCHOOL AT ESSEXVILLE, MICHIGAN, WAS DESCRIBED AS AN ORGANIZATION WHICH PERMITTED THE INDIVIDUAL LEARNER TO MOVE THROUGH AS MUCH SUBJECT MATTER AS HE CAN MASTER. DISCUSSION WAS PRESENTED ON (1) THE COMMUNITY, (2) THE SCHOOL, ITS ORGANIZATION AND OBJECTIVES, AND (3) THE ORGANIZATIONAL FEATURE STUDIED WHICH WAS THE MATHEMATICS DEPARTMENT. INCLUDED ALSO WERE DISCUSSIONS OF THE SCHOOL'S USE OF MEDIA FOR INDIVIDUALIZATION AND ITS SPACE AND FACILITIES. SOME OF THE INNOVATIVE PROCEDURES ADOPTED BY THE SCHOOL WERE (1) INDIVIDUALIZED INSTRUCTION, (2) MULTIPLE LEVELS OF INSTRUCTION WITHIN COURSES TO ACCOMMODATE SEVEN LEVELS OF GENERAL ABILITY, (3) NONGRADED PROGRAM, (4) CONTINUOUS PROGRESS OF STUDENTS, (5) FLEXIBLE SCHEDULING, AND (6) MOBILITY OF STUDENTS. FLOWCHARTS, ORGANIZATIONAL STRUCTURE, AND TABLES WERE INCLUDED. RELATED REPORTS ARE ED 010 575 AND ED 010 576. (RS)

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DATE 1/4/66 PAGE 1 OF 14 PAGES

The Organization of Interrelated Individual Progress and Ability Level Courses in Mathematics at Garber High School: An Introduction

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ABSTRACT

This Tech Memo is the first of a series reporting the work done at Garber High School in connection with the study New Solutions to Implementing Instructional Media Through Analysis and Simulation of School Organization. Garber High School, located at Essexville, Michigan, is described as a total organization in terms of its environment, objectives, use of instructional media, space, and facilities. A rationale for selecting the mathematics department as a focal organization for detailed analysis and simulation is presented.

* * * * * *

I. INTRODUCTION

In SDC Document TM-1493/101/00, Purpose and Strategy of the School Simulation Project, dated 19 December 1963, project personnel stated their intent to use system analysis and computer simulation techniques in an investigation of organizational modifications in education that support the use of instructional innovations. This 2 1/2 year study began with a nationwide survey of high schools to identify a select few that are demonstrating creative approaches in organizing their resources to use innovation. As a result of this survey, six specific schools including Garber High School, Essexville, Michigan, were chosen for intensive study.

Garber Junior-Senior High School is an outstanding example of a school that is organizing its resources in an attempt to meet the educational needs of all of its students. Not only does the school provide an exceptionally large variety of courses to fit the different ability levels and interests of its students, but many of these courses are organized on an individual progress basis. This latter feature enables the slower learners to learn well by giving them more time to achieve mastery of their material, and at the same time permits the faster learners to finish their work and go on to other courses. This wide choice of courses combined with their variable length makes it possible to virtually tailor each student's educational plan to his unique learning capabilities. Thus, students with lower abilities may spend more than the customary six years completing their combined junior-senior high school education and in the process take versions of basic required courses (mathematics, social studies, English, etc.) that emphasize practical skills. By contrast, students with higher abilities will be able to take more courses in their six years and will study their required work at a more abstract level.

The interest of this project with respect to Garber is in the way it has organized its resources to accommodate the different learning abilities of its students. The present report describes the school as a total organization with emphasis on its over-all goals. In order to limit the space of the work at Garber, the authors, in conjunction with school officials, selected a sub-organization within Garber for detailed analysis. The reasons for selecting the mathematics department as an example of Garber's approach to organization, conclude this initial report.

II. TECHNICAL DISCUSSION

A. THE COMMUNITY

Garber Junior-Senior High School is located in Essexville, Michigan, a city of about 5,000 population adjacent to Bay City. Both cities are on the Saginaw River at the point where it enters Saginaw Bay on Lake Huron. Economically, the general area is sustained by industry (automotive, machinery, cement, power, and shipbuilding) and by agriculture (sugar beets, vegetables, and corn). The cities are about 100 to 125 miles north of Michigan population and education centers such as Detroit, Ann Arbor, and Lansing.

A generation ago, Essexville was the center of rural Hampton Township, and enjoyed a steady growth about equal to neighboring Bay City. After World War II, Essexville's growth accelerated as its open areas were developed into suburban home sites for the larger city. At the present time, the two cities have a common boundary for about half of the smaller city's perimeter. The remainder of Essexville looks out upon the Saginaw River and toward rural Hampton Township.

As a consequence of this growth pattern, three fairly distinct populations comprising the Essexville-Hampton School District can be identified. Residents of central Essexville tend to be established second- or third-generation families who live in older modest housing and are employed in river-front industries. People in the rural area also tend to be established families who gain their living from agriculture. The newer areas tend to be populated by newcomers to the region whose employment is more likely to be in professional and managerial capacities in Bay City. The median income in Essexville is substantially higher than that of either Bay City or surrounding Bay County.

Delta Junior College, serving the tri-county region of Saginaw, Midland and Bay Counties, is about six miles from Essexville. In the same general locality Saginaw Valley College, a four-year, state-supported school, is in the planning stages. There are a number of small colleges within a 50 mile range, and numerous colleges, including Michigan State University and the University of Michigan, are located within a 100 mile range.

B. THE SCHOOL

1. Organization

The Essexville-Hampton school system serves a population of about 10,000 persons spread over an area of 23 square miles. The chief administrator is Mr. Quintin Cramer, Superintendent. The people elect a Board of Education, which in turn hires all employees, usually on the recommendation of the system's administrators.

Garber High School opened in the fall of 1964. Prior to that, the Essexville-Hampton school system consisted of three elementary schools serving kindergarten through the eighth grades. High school students were transported to Bay City Central High School. When Garber opened, the elementary schools were reorganized to accommodate children traditionally classed in kindergarten through the sixth grade. The new school functions as a combined junior-senior high school for the total system.

In its first year of instruction (1964-1965), Garber accepted those students traditionally classed in the seventh, eighth, ninth, and tenth grades, while the district's eleventh and twelfth graders continued to attend Central. In 1965-66, the eleventh grade was added, and in 1966-67, Garber will become a full six-year school. At present (December, 1965), there are 123 first-year students (seventh grade), 136 second-year, 149 third-year, 133 fourth-year, 115 fifth-year, and 29 special education students, making a total student body of 685. The combined junior-senior high school population will reach about 900 students in 1967 or shortly thereafter. The present physical plant has a capacity of 1,000 students, but the central facilities have been designed to expand to accommodate a student population of 2,000.

The organizational structure of the Essexville-Hampton district integrates the three elementary schools plus the high school at an operating level. Mr. Cramer, the Superintendent, functions as the principal administrator, handling all business and public relations. He coordinates the many functions and specialists involved in accomplishing the goals of the district. Mr. Robert Boston, the Assistant Superintendent, is in charge of high school personnel, of teaching, and of high school curriculum; and Mr. Damon Simon is Director of Guidance. All have their offices in the high school and are intimately involved in its operation. The district's organizational structure is shown in Figure 1.

In the high school proper, Mr. Daniel Gibson is the Assistant Principal. The regular instructional staff of 35 is organized into four departments and two teams. The departments are headed by chairmen and the teams by coordinators. Team A, the humanities area, includes the Social Studies, Language Arts, and Art and Music departments. Team B includes the Science, Mathematics, Homemaking, Business, Physical Education, Industrial Education, and Special Education departments.

2. School Educational Objectives

The expressed objective at Garber is that "the individual learner should be permitted to move through as much subject matter as he can master." To this end the school has adopted a number of procedures that represent an innovative approach to secondary education.

a. Individualized Instruction

Many courses at Garber are organized to allow a student to move through the course content independently of other students, at his own comfortable rate of speed. Ideally, this organization will apply to all courses, as materials can be developed to suit the students with lesser abilities who now are usually handled as a group.

b. Multiple Levels of Instruction Within Courses

The school is currently designing sufficient versions of courses to accommodate seven levels of general ability. The present situation finds virtually all courses presented at two or three levels. This means that, although the various levels deal with the same general concepts in subject matter, the level of detail and/or the medium of presentation may vary. Thus students of lesser abilities (who perhaps are deficient in reading skills) may be grouped for lecture while more apt students gain their information by reading.

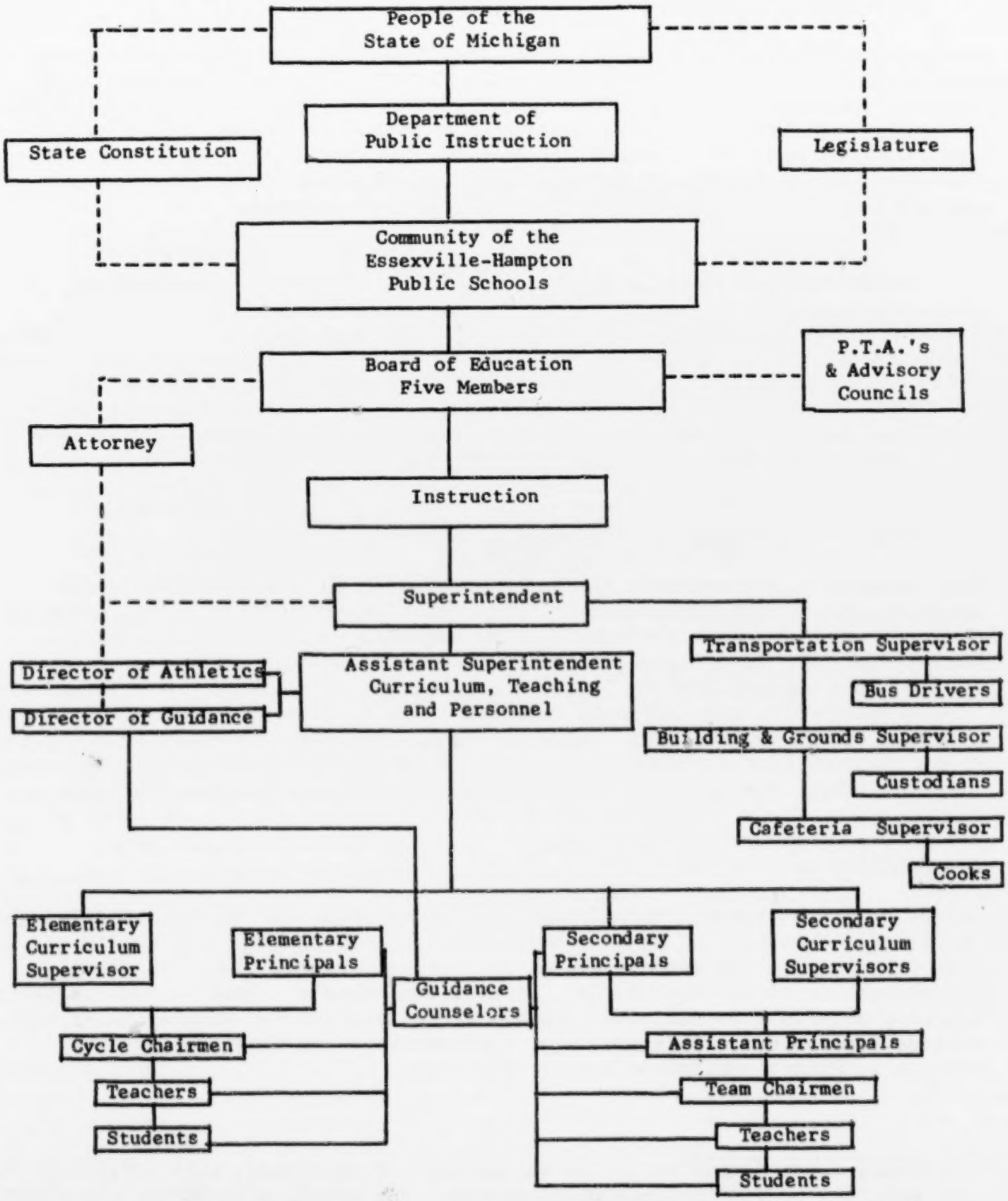

Figure 1. Organization Flow Chart
Essexville-Hampton Public Schools, Essexville, Michigan

c. Non-Graded Program

A Garber student can take any subject consistent with his educational goals and abilities, regardless of his class level. Terms such as "ninth-grade Algebra" or "tenth-grade English" are never used. Because of the traditional association of grades with subject matter, the school has discarded grade designations entirely. Students are classed by the number of years spent in the school, for example, "first-year student," etc.* Introductory algebra classes presently contain both second- and third-year students.

d. Continuous Progress of Students

The availability of individualized instructional materials, plus the non-graded organization of the curriculum, makes it possible for students to progress continuously through much of the curricula at Garber. The criterion for completing a course is the student's ability to pass a mastery test. If the next course in the same sequence is individualized, he can usually begin it immediately without waiting for the end of a quarter or semester.

e. Flexible Scheduling

The school's master schedule for the year 1964-65 (Figure 2) provides for class lengths varying from 40 to 125 minutes. Class length, on this annually produced schedule, is determined by instructional needs to have students attend class for three long periods per week, for instance, instead of for four or five shorter periods. Laboratory courses, for example, are longer and less frequent than nonlaboratory courses. Table 1 shows a weekly schedule for a typical third-year student. Time not spent in class is usually spent in a study hall (Section f, below). Since all students do not change classes simultaneously, the school does not use audible signals to mark the time.

f. Mobility of Students

Garber grants a student unusual freedom to move about the school. Depending on his status determined by year level and his performance in accepting responsibility, a student may absent himself from formal study halls and attend activities in other areas. He may, for example, elect to work in the learning materials center, the library, or in laboratories maintained by the various departments. This mobility, combined with the flexible schedule, results in almost continuous use of resources.

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*Obviously since Garber is in its second year of operation, this definition has been modified to fit the present situation. The school arbitrarily classifies students by the number of years that they would have normally spent in the school, had its period of operation extended indefinitely.

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AUSTIN NICKEL, President
WILFORD BARBER, Vice President
LOUIS WESTOVER, Treasurer
M. REECE EVANS, Secretary
JOHN DUNCAN, Trustee

	8:20	9:00	9:10	9:20	9:35	9:40	10:00	10:20	10:25	10:40	10:50	11:00	11:15	11:40
MONDAY	Eng 400 & 401-10 Eng 402-18		Soc Studies 300-8 Soc Studies 301-1 Soc Studies 302-3 (100)				Eng 300 & 301-10 Eng 302-18		Soc Studies 400-8 Soc Studies 401-1 Soc Studies 402-3 (75)				Band 300-44 Typing 400-20 Choir 300-43 Reading 310A-16 Mech Dr. 300 & 400-40 Study - Aud (50)	
	Biol 301 Jr High - 33 Science 200 A & B - 32 & 35 Math 202-25 Home Ec 100-43 Music 100-43 Ind Ed 100-34 Art 100-36 (60)			Math 200-28 Science 202-32 Alg 301 Jr High - 25 Phys Ed 100 - Gym (60)					Physical Education 200 - Gym (80) Math 102-28 Science 100 - A & B - 32 & 35 Math 101-30 (40)			Math 100-28 Science 102-32 Science 101-35 (40)		Junior High Lunch (30)
TUESDAY	Biology 401-32 Elect. 304 A-34		Phys Ed 300 & 400 - Gym Study - 25 (100)				Typing 400-20 Band 300-44		Study - 10 Elect 304 B - 34		Home Ec 300-37 (100)			(125)
	Eng 200-10 Eng 201-10 Eng 202-18 Ind Ed 100-34 Art 100-36 Music 100-43 Home Ec 100-37 (40)		TV Science 100 & 200 - Aud Alg 301 Jr. High - 28 Math 202-30 Study 100-8 (60)				Prac Math 300-28 (60)				Phys Ed 300 & 400 - Gym			(65)
							Soc Stu 200-8 Soc Stu 201-1 Soc Stu 202-3 (40)		Physical Science 402-35 Choir 200-43 Art 200-36 Study 200 - Aud (60)					(100)
							Physical Education 100 - Gym (60)					Math 102-25 Study 100 - Aud (40)		Junior High Lunch (30)
WEDNESDAY	Eng 400 & 401-10 Soc Stu 300-8 Soc Stu 302-3	Eng 402-18 Soc Stu 301-1 (75)					Eng 300 & 301-10 Soc Stu 400-8 Soc Stu 402-3		Eng 302-18 Soc Stu 401-1 (100)				French 352-10 German 354-15 Latin 351 B-11 Spanish 353-16 Latin 451-14 Home Ec 300-37 Study - Aud (50)	
	Biol 301 Jr. High - 33 Science 200 A & B - 32 & 35 Math 202-25 Ind Ed 100-34 Home Ec 100-37 Music 100-43 Art 100-36 (60)			Ind Ed 200-34 Home Ec 200-37 Study - Aud (80) Band 200-44 (65) Sci 100 A & B - 32 & 35 Math 102-28 Math 101-30 (40)			Math 100-28 Science 101-35 Science 102-32 (40)			Math 200-28 Science 202-32 Alg 301 Jr. High - 25 Phys Ed 100 - Gym (60)				Junior High Lunch (30)
THURSDAY	Eng 400 & 401-10 Soc Stu 300-8 Soc Stu 302-3	Eng 402-18 Soc Stu 301-1 (75)					Eng 300 & 301-10 Soc Stu 400-8 Soc Stu 402-3		Eng 302-18 Soc Stu 401-1 (75)			Mech Draw 300 & 400-40 Study - Aud Choir 300-43 Typing 400-20 Latin 351-25 Band 300-44 (50) Reading 310 B-16		(75) (50)
	Math 200-28 Biol 301 Jr. High - 32 Science 202-35 Ind Ed 100-34 Home Ec 100-37 Art 100-36 Music 100-43 (40)		TV Sci 100 & 200 - Aud Alg 301 Jr. High - 25 Math 102-28 Math 101-30 Study 200-16 (40)				Ind Ed 200-34 Band 200-44 Home Ec 200-37 Study 200 - Aud (60) Math 100-28 Science 101-32 Science 102-35 (70)			Physical Education 200 - Gym (60)		Soc Stu 100 A - 1 Soc Stu 102-3 Eng 101-5 Eng 100 A - 18 (50)		Junior High Lunch (30)
FRIDAY	Biol 301-32 Intro to Bus 300-20 Reading 310 A - 16 (50)		Alg 401-28 Metal 302-34			Study - 8 (100)	Algebra 301-28		Liv Science 300-32 (75)				French 352-10 Span 352-16 German 354-15 Latin 451-14 Latin 351 B - 11 Home Ec 300-37 (50)	
							Art 400 & Photo 302-36 (100) Elect 304 B - 34 Phys Ed 300 & 400 - Gym				Study - 25			(125)
	Phys Ed 200 - Gym Ind Ed 100-34 Home Ec 100-37 Art 100-36 Music 100-43 (40)		Choir 200-43 Art 200-36 Study 200 - Aud (40) Physical Education 100 - Gym (60)				Eng 200-10 Eng 201-10 Eng 202-18 (60) Band 100-44 Reading 110-16 Study 100 - Aud (60)			Soc Stu 200-8 Soc Stu 201-1 Soc Stu 202-3 (60)		Science 100 B - 33 Study 100 - Aud (40)		Junior High Lunch (30)

NUMBER AFTER COURSE NAME AND NUMBER IS ROOM ASSIGNMEN

Figure 2. Garber High School

QUINTIN CRAMER, Superintendent of [illegible]s
ROBERT BOSTON, Assistant Superintendent
DANIEL GIBSON, Assistant Principal
DAMON SIMON, Director of Guidance

	12:05	12:10	12:35	12:50	1:10	1:25	1:30	1:50	2:10	2:15	2:30	2:40	2:50	3:30	
		Senior High Lunch (30)	Algebra 401-28 Biol 301-32 Art 300-36 Home Ec 300 Parochial - 37				Intro to Bus 300-20 Metal 302-34 Phys Ed 300 & 400 - Gym Study - 25 (100)			Algebra 301-28 Art 400 & Photo 302-36 Living Science 300-32 Home Ec 400-37 Study - Aud (75)					MONDAY
Junior High Lunch (30)			Eng 200-10 Eng 202-18 Soc Stu 100 A - 1	Eng 201-10 Soc Stu 102-3 Study 100 - Aud (60)		Soc Stu 200-8 Soc Stu 202-3 Eng 101-5	Soc Stu 201-1 Eng 100 A - 18 Study 100 - Aud (60)			Exp Lang 250-10, 11, 14, 15 Reading 210-16 Soc Stu 100 B - 1 Soc Stu 101-3 Eng 100B-5 Eng 102-18 (40)		Junior High Activities Orientation 100-8, 9, 12, 13 Study - 10 (40)			
(125) (65) (100)		Senior High Lunch (30)	French 352-10 Latin 451-14 Latin 351 B - 11 Study - 8 German 354-15 Spanish 353-16 (50)				Choir 300-43 Latin 351-25 Mech Dr 300 & 400-40 Study - 10 Art 400 & Photo 302-36 (75) Reading 310 B - 16 (50)						Senior High Activities Study - Aud (50)		TUESDAY
Junior High Lunch (30)			Ind Ed 200-34 Band 200-44 Band 100-44 Study 100 - Aud (40)	Home Ec 200-37 Study 200 - Aud (80) Math 100-28 Math 101-25 Study 100 - Aud (40)			Phys Ed 200 - Gym (60) Science 101-32 Science 102-35 Study 100 - Aud (40)			Soc Stu 100 B - 1 Eng 100 B - 5 Eng 102-18 Soc Stu 101-3 (40)		Math 200-28 Science 202-32 Biol 301 Jr. High - 35 (60) Eng 100 A - 18 Eng 101-5 Soc Stu 100 A - 1 Soc Stu 102-3 (40)			
(50))		Senior High Lunch (30)	Alg 301-28 Study - 8 Living Science 300-32 Phys Ed 300 & 400 - Gym Home Ec 300 Parochial - 37 (100) Latin 351-25 (50)							Alg 401-28 Biol 301-32 Art 300-36 Intro to Bus 300-20 Home Ec 400-37 Metal 302-34 Study - 25 (75) Reading 310 A - 16 (45)					WEDNESDAY
Junior High Lunch (30)			Choir 200-43 Art 200-36 Study 200 - Aud (80) Soc Stu 102-3 Soc Stu 100 A - 1 Study 100 - Aud (40)	Eng 100 A - 18 Eng 101-5 Study 100 - Aud (40)			Eng 200-10 Eng 201-10 Eng 202-18 Band 100-44 Reading 110-16 Study 100 - Aud (40)			Soc Stu 200-8 Soc Stu 201-1 Soc Stu 202-3 Eng 102-18 Eng 100 B - 5 Study 100 - Aud (40)		Exp Lang 250-10, 11, 14, 15 Reading 210-16 Soc Stu 100 B - 1 Soc Stu 101-3 Study 100 - Aud (40)			
(75) (50)		Senior High Lunch (30)	Biol 401-32 Physical Science 402-35 Elect 304 A - 34 Phys Ed 300 & 400 - Gym				Prac Math 300-28 Home Ec 400-37 Art 300-36 Study - 25 (100)			French 352-10 Latin 351 B - 11 Latin 451-14 Elect 304 B - 34		German 354-15 Spanish 353-16 Home Ec 300-37 Phys Ed 300 & 400 - Gym Study - 10 (75)			THURSDAY
Junior High Lunch (30)			Eng 200-10 Eng 202-18 Band 100-44 Study 100 - Aud Reading 110-16 (60)	Eng 201-10		Soc Stu 200-8 Soc Stu 201-1 Soc Stu 202-3 Study 100 - Aud	Eng 102-18 Eng 100 B - 5 (60)			Math 202-25 Study 200 - Aud Soc Stu 101-3 Soc Stu 100 B - 1 Study 100 - Aud (40)		Junior High Activities Orientation 100-8, 9, 12, 13 Study - Aud (40)			
352-16 451-14 (50) (125)		Senior High Lunch (30)	Biol 401-32 Phys Science 402-35 Phys Ed 300 & 400 - Gym Home Ec 300 Parochial - 37 Prac Math 300-28 Elect 304 A - 34 Study - 10 (75)					Latin 351-8 Band 300-44 Choir 300-43 Reading 310 B - 16 Typing 400-20 Mech Dr 300 & 400-40 Study - 10 (50)					Senior High Activities Study - 8 (50)		FRIDAY
Junior High Lunch (30)			Biol 301 Jr. High - 32 Math 202-25 Study 200 - Aud (40) Eng 100 A - 18 Eng 101-5 Soc Stu 102-3 Soc Stu 100 A - 1 (60)	Science 200 A - 33 Math 200 A - 25 Study 200 - Aud (40)			Math 200 B - 25 Science 200 B - 33 Study 200 - Aud (40) Eng 100 B - 5 Eng 102-18 Soc Stu 100 B - 1 Soc Stu 101-3 (60)			Alg 301 Jr. High - 25 Science 202-32 Study 200 - Aud (40) Science 100 A - 35 Math 101-30 Math 102-28 Study 100 - Aud (40)		Exp Lang 250-10, 11, 14, 15 Reading 210-16 (40) Math 100-28 Science 101-32 Science 102-35 (40)			

ASSIGNMENT. NUMBERS IN PARENTHESES INDICATE LENGTH OF PERIOD.

School Master Schedule

Table 1. Typical Student Schedule

SUBJECT	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Social Studies	8:20-10:00 (100 min)		8:20-9:35 (75 min)	8:20-9:35 (75 min)	
English	10:00-11:15 (75 min)		9:35-11:15 (100 min)	9:35-10:50 (75 min)	
French		12:35-1:25 (50 min)	11:15-12:05 (50 min)	2:15-3:30 (75 min)	11:15-12:05 (50 min)
Mathematics	2:15-3:30 (75 min)		12:35-2:15 (100 min)		10:00-11:15 (75 min)
Biology	12:35-2:15 (100 min)		2:15-3:30 (75 min)		8:20-10:00 (100 min)
Physical Ed.		11:00-12:05 (65 min)		12:35-2:15 (100 min)	
Activities		2:40-3:30 (50 min)			2:40-3:30 (50 min)

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3. The Media Used for Individualization

Garber instructors use a variety of instructional media in their individualized courses. Individualization requires that each student receive instruction in content when he is ready for it--independent of other students and their needs. Textbooks are the primary medium for presenting content. Texts are frequently supplemented by other reading (paperback books are extensively used), by programmed instruction materials, workbooks, filmstrips, and audio tapes.

Individualized instruction also requires that in addition to a medium for presenting content, a program or set of procedures exist so that a student can know his assignments and what he must do. During the first year that Garber offered instruction, most individualized courses used relatively informal procedures. Instructors tended to select textbooks that were designed for self-learning and to depend on the structure of the text to provide the programming. For example, in one mathematics course the selected text devoted a single chapter to a major concept. Each chapter was subdivided into a half-dozen or so "lessons." Each lesson consisted of several pages of explanation and examples ending in a set of problems. Students were told to study the materials on their own and to work the accompanying problems. If the problems were correct, the student could then progress to the next "lesson."

During the second year at Garber there has been a marked tendency to provide more formal and more explicit procedures for individualized instruction. The medium used for this is a study or curriculum guide. Study guides are booklets prepared for students which tell them in detail what they are expected to accomplish in a particular course. The guides provide a student with a sequence of assignments and a schedule so that he may pursue a particular course independent of the others who are taking the same course. From an instructor's viewpoint, one advantage of using a study guide is that in planning a course he is not constrained by a particular textbook in organizing his subject matter. The medium for organizing the material is the study guide--not a textbook. Students can be directed to read materials from numerous sources, to view filmstrips, listen to audio tapes, prepare projects, etc. The student benefits from a study guide because the program he is to follow is explicit.

4. Space and Facilities

Garber High School is housed in a new building incorporating many outstanding architectural features in its design. Figure 3 shows a floor plan of the school. The building was planned with sufficient flexibility to accommodate traditional instructional plans, team teaching, closed circuit television and independent study. The six large classrooms hold from 45 to 100 students each and can be divided by folding partitions into 22 smaller rooms for groups of 15 to 25 students. The auditorium is designed so that three different large classes can be instructed simultaneously.

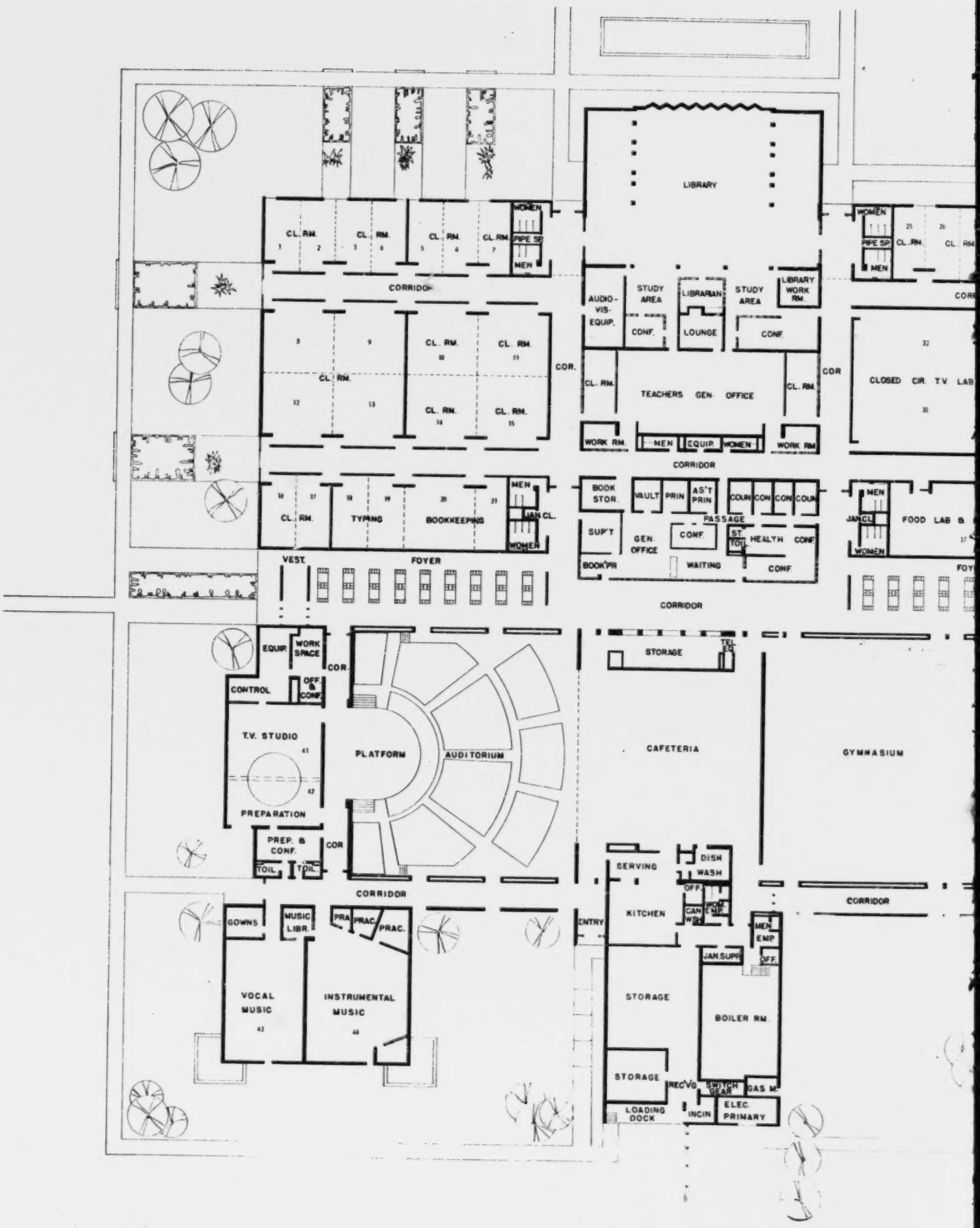

Figure 3. Garber High School

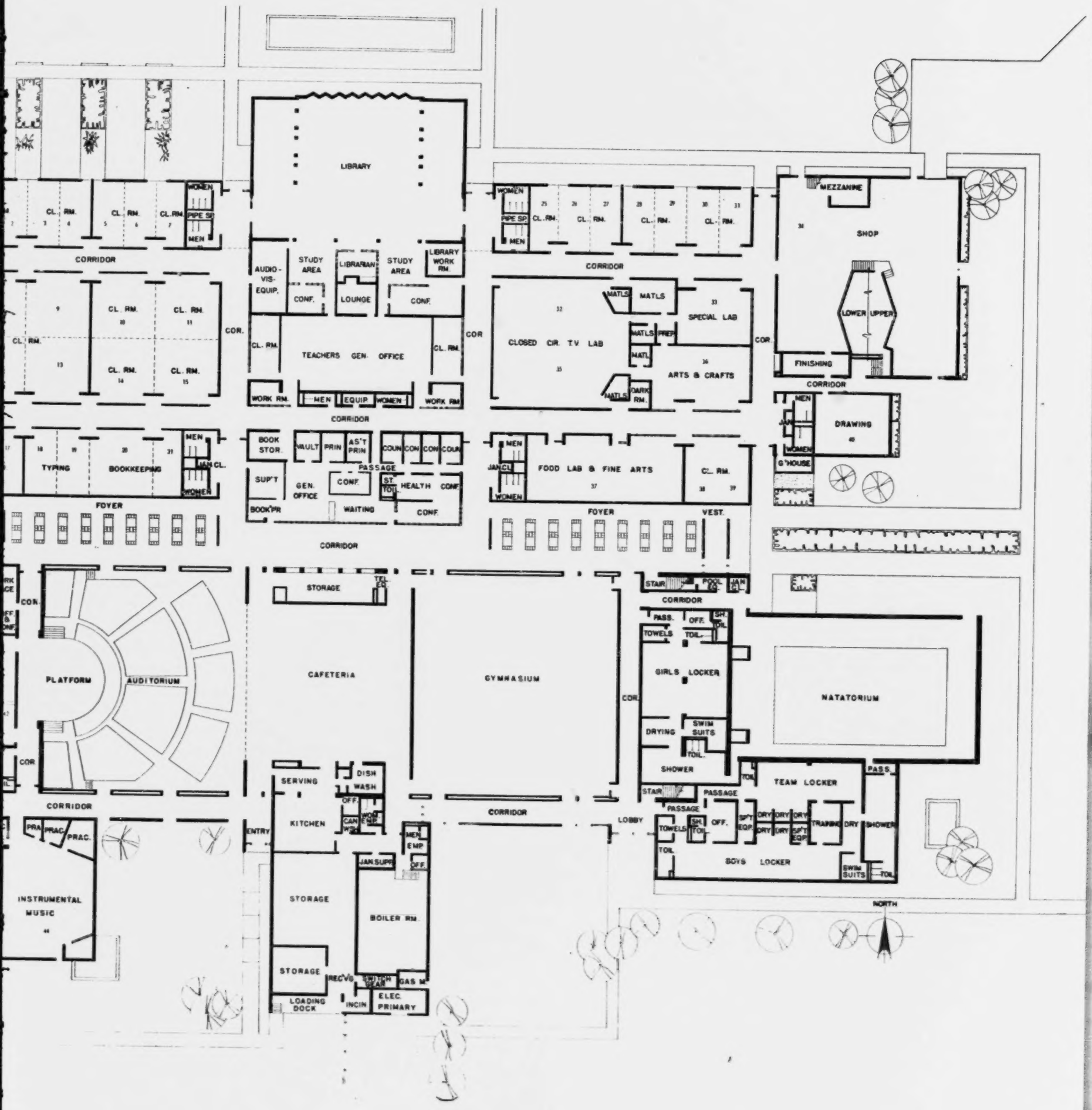

Figure 3. Garber High School

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The learning resources area, consisting of the library and the learning materials center, occupies a central location in the academic areas of the school. This area provides space, materials, and assistance for students to facilitate their pursuit of instructional objectives in the individual mode.

The large open-stack library contains an initial consignment of 6,000 volumes and is designed to hold 38,000. There are approximately 100 individual carrels and study spaces within the library. The learning materials center contains filmstrips, audio tapes, records, and sets of transparencies, as well as equipment for those types of presentation. Two soundproofed conference rooms which can be divided into five smaller rooms are within the area. These rooms can be used by small groups of students to hold a discussion, view a film, or listen to tape or records.

A professional librarian is in charge of the learning resources area. She is assisted in the library by a nonprofessional. Another assistant, trained to make transparencies and to operate copying and printing devices, is located in the materials center.

The teachers' general office is in a large open room. Each instructor is provided with an individual desk, and the desks are clustered by department and teams. When instructors are not in classrooms, they are available here to give students individual attention. Adjacent to this room are laboratories for mathematics and for humanities. Resource materials and space for their use are available in these rooms.

The science laboratory is a large room in which laboratory tables are arranged in two concentric octagons about a central instructor's position. The room has been wired for closed circuit television, so that close-up views of demonstrations at the instructor's position can be displayed on six monitors around the room. This television facility, including also a large studio of professional quality located in another part of the building, is not presently equipped for use. The school has chosen to delay completion of their closed circuit television system until its role in instruction can be more clearly defined.

C. THE ORGANIZATIONAL FEATURE STUDIED AT GARBER

At the time of this study, Garber High School is in its second year of operation; consequently, its plan is only partially implemented. The nature of schools and people being what it is has resulted in some academic departments achieving better definition of this plan than others. Currently, the mathematics department is one of those that has a relatively well defined organizational plan to provide students with instruction to meet their individual needs. Because of this, the mathematics department is the specific organization that will be the subject of a detailed study.

The next document in this series, TM-1493/161/00, provides a descriptive analysis of the mathematics department at Garber High School as a focal organization. TM-1493/162/00, the third document in the series, contains a system analysis of this organization and the results of studies in which the plan is simulated on computer.